

[0118] For example, the color converter 163 may perform color conversion to emphasize the main target more by setting relative conversion rates therefor. Here, the conversion rates may be preset and stored in the graphic memory 165. In this regard, the conversion rates of the main target and the sub-target may be fixed, may be differently set between the object of the main target and the object of the sub-target, or may be differently set in accordance with analysis results of color distribution, without being limited thereto. For example, a conversion rate when the main target is the human skin and the sub-target is sea may be different from that when the main target is the human skin and the sub-target is grass.

[0119] According to another exemplary embodiment, the conversion rates may be set proportionally to an area of the main target in the main viewing area. For example, as the area of the main target increases, color conversion for the main target may be performed more intensely than that for the sub-target.

[0120] Meanwhile, colors not included in the first region R1 of the image are not converted. If all colors are converted, image quality may deteriorate and the immersive feeling may decrease. Thus, the color converter 163 according to an exemplary embodiment may convert only the colors of the main target or convert the colors of the main target and the sub-target with different conversion rates.

[0121] The graphic memory 165 may store image processing programs, data, and the like. In addition, the graphic memory 165 may store image data before color conversion. Accordingly, the color selector 161 and the color converter 163 may perform color conversion by using image data before color conversion stored in the graphic memory 165.

[0122] In addition, the graphic memory 165 may store image data after color conversion, and the controller 170 may receive the data from the graphic memory 165 and display the data on the display panel 20. Meanwhile, the graphic memory 165 may be implemented using various known memories without limitation.

[0123] The color regions and preferred colors may be preset on the object basis. The graphic memory 165 may store data about the color space, color regions of the color space, and preferred colors. Thus, the color selector 161 may select a preferred color for color conversion by using the data stored in the graphic memory 165.

[0124] Meanwhile, although data about the color space, color regions of the color space, and preferred colors is prestored during designing, they may also be updated continuously via the communicator 150, or the like, without being limited thereto.

[0125] Meanwhile, as described above, the color selector 161 and the color converter 163 may be implemented using a graphic processor. In this case, the graphic processor and the graphic memory 165 may be implemented using single chips, respectively. However, the graphic processor and the graphic memory 165 are not limited thereto and may also be integrated in a single chip. In other words, the color selector 161, the color converter 163, and the graphic memory 165 may be implemented using single chips, respectively, or integrated into a single chip, without being limited thereto.

[0126] Meanwhile, the display apparatus 1 may include the controller 170. The controller 170 includes a processor 171 and a memory 173 as illustrated in FIG. 2.

[0127] The memory 173 may store control programs and control data to control operation of the display apparatus 1

and temporarily store control commands received via the input unit 110 or control signals output from the processor 171.

[0128] The processor 171 may control the overall operation of the display apparatus 1. The processor 171 may control operation of each of the elements by generating control signals to control the elements of the display apparatus 1.

[0129] For example, the processor 171 may transmit or receive a signal including data to or from an external device via the control signal by controlling the communicator 150. According to another exemplary embodiment, the processor 171 may control the volume of sounds output via the speaker 131 by transmitting a control signal to the sound output unit 130 in accordance with a command to control the volume received from the input unit 110.

[0130] As another example, the processor 171 may control the image processor 160 to perform image processing on contents received from the content receiver 120 and control the display 140 to display the processed image.

[0131] According to an exemplary embodiment, the processor 171 may perform color conversion on an image of contents received from the content receiver 120 by controlling the image processor 160 via the control signal. Also, the processor 171 may control the display 140 to display a color-converted image via a control signal.

[0132] In addition, the processor 171 may process various data stored in the memory 173 in accordance with control programs stored in the memory 173. Although the processor 171 is separated from the memory 173 above, the processor 171 and the memory 173 are not limited to the separate chips described above. The processor 171 and the memory 113 may also be integrated into a single chip. Hereinafter, operation of the display apparatus 1 converting colors will be described.

[0133] FIG. 6 is a flowchart for describing operation of a display apparatus according to an exemplary embodiment performing color conversion with different rates by setting a main color and a sub-color. FIGS. 7A to 7C are views for describing differences among images caused by color conversion according to an exemplary embodiment.

[0134] The display apparatus may perform color conversion in an image by determining at least one of the main target and the sub-target, and display a color-converted image on the display panel. In this case, the display apparatus may repeat determination of the main target and the sub-target in accordance with a change in scenes of the image.

[0135] An image includes at least one scene. Here, color conversion performed while a scene is maintained may interrupt the user watching the image due to a sudden change in colors of the image. In addition, if the target for color conversion is changed even when the scene is not changed, user's immersion in watching the image may decrease.

[0136] Thus, while color conversion is not performed, the display apparatus does not perform color conversion operation before the scene is changed. Alternatively, while color conversion is performed, the display apparatus does not change the target for color conversion.

[0137] Thus, the display apparatus may determine whether the scene of the image provided via the display panel is changed (600). When the scene of the image is not changed, the display apparatus maintains previous colors.